

LOW-ENERGY VENTURI PRE-SCRUBBER FOR AN AIR POLLUTION CONTROL SYSTEM AND METHOD

ABSTRACT OF THE DISCLOSURE

A low-energy venturi pre-scrubber optimized for removing abrasive particles from a gaseous effluent is disclosed. While venturi scrubbers are efficiently used for removing entrained particulates in air pollution control systems, they can be damaged due to the abrasive characteristics of entrained particles, such as silica particles greater than a micrometer in diameter. According to the present invention, high scrubbing efficiencies can be obtained in equipment that is not damaged by the abrasive particles by first removing the abrasive particles in a low-energy venturi, and then removing the remaining particles in a second scrubber. In addition to improving the lifetime and reducing the maintenance costs of the venturi, scrubbing fluids have fewer large particles, allowing their use in downstream components, such as evaporative coolers.